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ABSTRACT

In 1992-93, Saginaw (Michigan) School District bilingual and migrant programs operated as one program at 24 elementary schools, 4 junior high schools, and both high schools. Enrollments were 677 students, primarily Hispanics, in the bilingual program and 585 students in the migrant program, but there was considerable overlap between enrollments. Services consisted primarily of supplemental instruction for 30 minutes per week on a pullout basis. Kindergarten through sixth grade students received instruction in reading, while students in grades 7-12 received instruction in the basic skills as well as counseling and support services. The product evaluation of the program consisted of comparisons between reading and math pretest and posttest scores on the California Achievement Tests. The performance standard used to evaluate program success was mean posttest normal curve equivalent (NCE) scores improvement over pretest NCE scores. In the bilingual program, 75 percent (12 of 16 grades) attained the performance standard in basic and advanced mathematics and 50 percent attained the standard in basic and advanced reading. In the migrant program, 62.5 percent attained the performance standard in mathematics and 25 percent attained the standard in reading. Recommendations for program improvement include reducing variations in the program between building sites, offering inservice training for regular educators, centralizing instructional sites, and involving parents. Tables throughout the text detail achievement gains by grade level. Appendices list program enrollments by building, explain identification and eligibility procedures, and provide tables of achievement gains. (KS)

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ED 365 496

EVALUATION REPORT

STATE BILINGUAL AND ECIA
CHAPTER 1 MIGRANT PRODUCT
EVALUATION REPORT

1992-93

DEPARTMENT OF EVALUATION SERVICES

- PROVIDING ASSESSMENT, PROGRAM EVALUATION AND RESEARCH SERVICES -

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STATE BILINGUAL AND ECIA
CHAPTER 1 MIGRANT PRODUCT
EVALUATION REPORT

1992-93

An Approved Report of the

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October, 1992

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PROGRAM DESCRIPTION

The Section 41, State Bilingual Education program and the Federal Education Consolidation and Improvement Act (E.C.I.A.) Chapter 1, Migrant Education program are programs designed to meet the special educational needs of State Bilingual and Migrant students in the School District of the City of Saginaw. These programs were operated by the school district during the 1992-93 school year.

The State Bilingual and Migrant programs operated at 24 elementaries, four junior highs, and both high schools. (See Appendix A for the number of State Bilingual and Migrant students participating by building as of October 12, 1992 and December 10, 1992 computer runs respectively.) Instruction was provided primarily on a pull-out basis, with each student receiving approximately thirty minutes of supplemental instruction per week.

STATE BILINGUAL PROGRAM

The State Bilingual program served approximately 677 students during the 1992-93 school year. The vast majority of the students were Hispanic, with a small number of Laotian students completing the program population.

Instruction was provided to K-6 students in reading. Students in grades 7-12 also received instruction in the basic skills, as well as counseling and support services.

The State Bilingual program served students whose primary language was other than English, or who came from a home environment where a language other than English was regularly used.

MIGRANT PROGRAM

The Migrant program provided supplemental reading instruction for the children of Migrant workers. A total of approximately 585 students K-12 participated in the 1992-93 program.

The Bilingual program served students whose primary language was other than English, or who came from a home environment where a language other than English was regularly used. The Migrant Education program served students whose families follow the crops or fishing industry for a livelihood, and as a result the students have experienced educational discontinuity.

ELIGIBILITY CRITERIA FOR BOTH PROGRAMS

Although the program philosophies differ, the student populations overlap because, in most circumstances, a student in the Migrant program comes from an environment where English was not the primary language spoken in the home. In view of this fact, these two programs cooperate as one, the staff serving the students were the same, and all materials and activities were shared by the programs.

A complete description of student eligibility criteria for each program is given in Appendix B. It should be noted that the State Bilingual program does have a complex set of criteria to be satisfied before a child can participate. However, the basic element in the eligibility process is collecting a Home Language Survey (HLS) from all potentially eligible students district-wide.

PROCEDURES FOR EVALUATION

Both process and product evaluations were undertaken for the State Bilingual and Migrant programs. This year's process evaluation was accomplished by a 28-item questionnaire that focused on the following: 1) combined operational aspects; 2) Migrant specific operational details from the program proposal; 3) Bilingual specific operational details from the program proposals, 4) recent actions to change program operations for State Bilingual and Migrant, and 5) future program improvement ideas related to both programs. All 12 staff members were sent through inter-office mail on Friday, November 6, 1992. Respondents were to return the completed questionnaire no later than November 13, 1992. The results of these process surveys (N=12 or 100% of the staff) were presented in a separate report published and disseminated earlier in the year.

The product evaluation, which is the focus of this report, addresses the results of student test performance. The California Achievement Tests (CAT) for grades 1-12 served as the evaluation instruments. These tests were administered on a pre-test basis in the Spring, 1992 (CAT Form-E/F) and on a post-test basis in Spring, 1993 (CAT Form-A). These forms were used and equated to the 1991 norms used for CAT Form-A. The locally adopted performance standard used to evaluate program success was that: mean post-test normal curve equivalent (NCE) scores will evidence improvement over pre-test NCE scores. Attainment of this standard means that student rates of learning have exceeded their normal rates. The reader should bear in mind that most of these students have not learned at normal rates in the past.

Students in grades K-12 were pre- and post-tested with the CAT on a spring-to-spring basis to determine their achievement in reading and mathematics as required by the funding sources. A new feature for a third year is

the inclusion of advanced skills for reading (reading comprehension scores) and mathematics (mathematics concepts and application scores) in the product evaluation review. These two subtests are part of the total reading or mathematics scores. As in past evaluation reports, the total reading and total mathematics scores will serve as the measure of basic skills progress. All testing was performed on-level, that is, students took a test at a level of difficulty appropriate for their grade.

PRODUCT EVALUATION RESULTS

Overall achievement results in reading and mathematics for basic as well as advanced skills will be presented for each program. Grade level results by subject area for each program will be presented and discussed. Then the combined results of the two programs will be summarized.

Where relatively few students were tested at any grade level and for a building, the results should be viewed with caution.

OVERALL ACHIEVEMENT FOR STATE BILINGUAL

Reading Basic Skills

Table 1 below contains the grade level results for the State Bilingual program in basic reading skills.

Table 1

Attainment of the Performance Standard in Total Reading

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	39	31.8	32.8	1.0	Yes
3	8	26.6	32.3	5.7	Yes
4	11	33.8	26.9	-6.9	No
5	7	33.0	26.0	-7.0	No
6	3	36.7	39.0	2.3	Yes
7	4	32.0	32.5	0.5	Yes
8	2	25.0	25.0	0.0	No
9	3	36.6	26.0	-10.6	No
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Students in grades 2, 3, 6, and 7 demonstrated positive NCE gains between 0.5 to 5.7 NCE units. Students in grades 4, 5, 8, and 9 did not attain the standard. Since grades 3, 5, 6, 7, 8, and 9 had less than ten students per grade, the results should be viewed cautiously. Across the board, four of the eight (50.0%) grades attained the performance standard in basic reading skills.

Reading Advanced Skills

Table 2 below contains the results by grade for State Bilingual participants in advanced reading skills.

Table 2

Attainment of the Performance Standard for Reading Comprehension

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	39	34.9	32.5	-2.4	No
3	8	31.5	32.7	1.2	Yes
4	11	34.7	32.0	-2.7	No
5	7	35.1	29.2	-5.9	No
6	3	37.0	46.6	9.6	Yes
7	4	34.7	38.0	3.3	Yes
8	2	21.5	28.5	7.0	Yes
9	3	40.6	23.3	-17.3	No
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

As can be seen in Table 2 above students in grades 3, 6, 7, and 8 demonstrated positive NCE gains from 1.2 to 9.6 NCE units. State Bilingual students in grades 2, 4, 5, and 9 did not attain the standard and demonstrated

losses between -2.4 to -17.3 NCE units in advanced reading skills. However, since less than ten students were present in grades 3, 5, 6, 7, 8, and 9 the majority of the above results should be viewed cautiously. Overall, four of eight (50.0%) grades attained the performance standard in advanced reading skills.

Mathematics Basic Skills

Grade level results are presented in Table 3 below.

Table 3

Attainment of the Performance Standard in Total Mathematics

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	19	26.1	38.2	12.1	Yes
3	4	10.0	24.7	14.7	Yes
4	3	32.6	25.3	-7.3	No
5	1	23.0	41.0	18.0	Yes
6	-	-	-	-	-
7	1	13.0	26.0	13.0	Yes
8	2	23.5	30.0	6.5	Yes
9	2	30.0	33.0	3.0	Yes
10	1	27.0	28.0	1.0	Yes
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Students tested met the performance standard for basic mathematics skills at grades 2, 3, 5, 7, 8, 9, and 10. The fifth grade student demonstrated the greatest positive gain of 18.0 NCE units while the tenth grade student had the smallest positive gain of 1.0 NCE points. Results for grades 3, 4, 5, 7, 8, 9, and 10 should be viewed again with caution because each grade level had

less than ten students. Overall, six of the eight (75.0%) grades attained the performance standard.

Mathematics Advanced Skills

Table 4 below presents grade level results for State Bilingual participants in advanced mathematics skills.

Table 4

Attainment of the Performance Standard for Mathematics Concepts and Applications

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	19	33.6	37.0	3.4	Yes
3	4	9.5	23.7	14.2	Yes
4	3	39.0	29.0	-10.0	No
5	1	24.0	38.0	14.0	Yes
6	-	-	-	-	-
7	1	16.0	24.0	8.0	Yes
8	2	25.5	25.0	0.0	No
9	2	29.5	26.0	-3.5	No
10	1	32.0	48.0	16.0	Yes
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Students on the mathematics concepts and applications subtest attained the performance standard in grades 2, 3, 5, 7, and 10. The tenth grade student demonstrated the greatest positive gain of 16.0 NCE units and the second graders showed the smallest positive gain of 3.4 NCE units. Since grades 3, 4, 5, 7, 8, 9, and 10 each had less than ten students represented, the results of each should be treated cautiously. Across the board, five of the eight (62.5%) grades attained the performance standard.

OVERALL ACHIEVEMENT FOR MIGRANT

Reading Basic Skills

Grade level results for Migrant students are presented in Table 5 below.

Table 5

Attainment of the Performance Standard in Total Reading

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	21	32.0	28.9	-3.1	No
3	21	33.1	32.5	-0.6	No
4	15	29.8	26.8	-3.0	No
5	12	31.0	26.1	-4.9	No
6	22	31.2	30.5	-0.7	No
7	10	33.2	35.9	2.7	Yes
8	8	21.8	26.2	4.4	Yes
9	7	30.4	25.1	-5.3	No
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Students tested obtained the performance standard at grades 7 and 8. Grades 2, 3, 4, 5, 6, 7, and 9 failed to meet the standard. Since grades 8 and 9 had less than ten students each, the resulting gains should be viewed cautiously. Thus, two of the eight (25.0%) grades attained the performance standard for basic reading skills.

Reading Advanced Skills

Table 6 below presents grade level results for Migrant students in advanced reading skills.

Table 6

Attainment of the Performance Standard for Reading Comprehension

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	21	34.8	29.5	-5.3	No
3	21	34.5	34.5	0.0	No
4	15	32.2	28.1	-4.1	No
5	12	37.2	28.0	-9.2	No
6	22	33.7	33.4	-0.3	No
7	10	37.4	37.5	0.1	Yes
8	8	26.6	28.5	1.9	Yes
9	7	34.4	26.3	-8.1	No
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Migrant students attained the performance standard in all grades except 2, 3, 4, 5, 6, and 9. The greatest positive gain of 1.9 NCE units occurred in grade 8 and the smallest positive gain was observed in grade 7 of 0.1 NCE units. Again, since less than ten students were represented in grades 8 and 9 (eight and seven students respectively) these results should be treated cautiously. Overall, two of eight (25.0%) attained the performance standard in advanced reading skills.

Mathematics Basic Skills

Grade level results are presented in Table 7 below.

Table 7

Attainment of the Performance Standard in Total Mathematics

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	7	25.0	37.2	12.2	Yes
3	15	37.2	39.3	2.1	Yes
4	8	37.5	39.0	1.5	Yes
5	9	28.8	33.3	4.5	Yes
6	14	26.2	26.5	0.3	Yes
7	3	26.0	30.0	4.0	Yes
8	2	24.0	17.5	-6.5	No
9	7	28.7	32.0	3.3	Yes
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Students tested obtained the performance standard at grades 2, 3, 4, 5, 6, 7, and 9. Again, since less than ten students are present at grades 2, 4, 5, 7, 8, and 9, these results should be viewed cautiously. Across the board, seven of the eight grades (87.5%) attained the performance standard.

Mathematics Advanced Skills

Grade level results for Migrant students are presented in Table 8 below in the area of advanced mathematics skills.

Table 8

Attainment of the Performance Standard for Mathematics Concepts and Applications

Grade	Number of Students Tested	Normal Curve Equivalent			Performance Standard[a] Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	7	29.4	37.2	7.8	Yes
3	15	44.4	33.9	-10.5	No
4	8	43.5	33.6	-9.9	No
5	9	35.7	33.5	-2.2	No
6	14	27.6	29.0	1.4	Yes
7	3	25.7	28.0	2.3	Yes
8	2	25.0	19.5	-5.5	No
9	7	31.8	31.0	-0.8	No
10	-	-	-	-	-
11	-	-	-	-	-
12	-	-	-	-	-

[a]Post-test normal curve equivalent (NCE) score will evidence improvement over pre-test NCE score.

Migrant participants obtained the performance standard in grades 2, 6, and 7. Since less than 10 students were pre- and post-teswted at grades 2, 4, 5, 7, 8, and 9, these results must be viewed cautiously. Overall, three of the eight (37.5%) grades attained the performance standard in the advanced mathematics.

OVERALL ACHIEVEMENT FOR STATE BILINGUAL AND MIGRANT PROGRAMS

Table 9 below presents in summary form the attainment of the performance standard by program, subject, and grade. As these data indicate, the State Bilingual students attained the performance standard in grades 3 and 7 in both subjects for both basic and advanced skills. The Migrant program students attained the performance standard at grade 7 in both subjects for both basic and advanced skills. Overall the State Bilingual program students seemed more effective in basic/advanced mathematics with 75.0% (12 of 16) grades attaining the standard than in basic/advanced reading with 50.0% (8 of 16). The Migrant program participants showed more effectiveness in mathematics with 62.5% (10 of 16) grade attainments than in reading with 25.0% (4 of 16) grades attaining the standard.

Table 9

Attainment Status[a] for Basic and Advanced Skills in Reading and Mathematics by Program

GRADE LEVEL	STATE BILINGUAL				MIGRANT			
	Reading		Mathematics		Reading		Mathematics	
	Basic	Advanced	Basic	Advanced	Basic	Advanced	Basic	Advanced
2	Yes	No	Yes	Yes	No	No	Yes	Yes
3	Yes	Yes	Yes	Yes	No	No	Yes	No
4	No	No	No	No	No	No	Yes	No
5	No	No	Yes	Yes	No	No	Yes	No
6	Yes	Yes	-	-	No	No	Yes	Yes
7	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	No	Yes	Yes	No	Yes	Yes	No	No
9	No	No	Yes	No	No	No	Yes	No
10	-	-	Yes	Yes	-	-	-	-
11	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-
Total[b]								
Yes	4 (50.0%)	4 (50.0%)	7 (87.5%)	5 (62.5%)	2 (25.0%)	2 (25.0%)	7 (87.5%)	3 (37,.5)
No	4 (50.0%)	4 (50.0%)	1 (12.5%)	3 (37.5%)	6 (75.0%)	6 (75.0%)	1 (12.5%)	5 (62.5%)

[a]A "yes" attainment status means the average post-test NCE score was greater than the average pre-test NCE score.

[b]Total frequency distribution of attainment of performance by subject/skill, program, and grade.

The achievement results, which have been presented, were also tabulated by building. These data are presented in Appendix C.

SUMMARY

The 1992-93 school year was the fourteenth year that students in the State Bilingual and Migrant programs were assessed in reading and mathematics, using a norm referenced test. The California Achievement Test (CAT) normed in the Spring of 1991 was used for program evaluation purposes.

The locally adopted performance standard for the overall program was that grade level post-test mean NCE scores would evidence improvement over pre-test scores.

The State Bilingual results show a **increase** from the previous year in the percent of grade levels meeting the performance standard in **both reading** and **mathematics.** For the State Bilingual program the 8.3% points increase in reading was from 41.7% meeting the same standard last year (10 of 24 observations) to 50.0% meeting the same performance standard this year (8 of 16 observations). The increase of 40.2 points in mathematics was from 34.8% (8 of 23 observations) to 75.0% (12 of 16 observations).

The Migrant results show a **decrease** from the previous year in the percent of grade levels meeting the performance standard in **reading** while an **increase** in **mathematics** was shown. The 16.7% points decrease in reading came about from 10 of 24 observations (41.7%) meeting the standard last year to 4 of 16 observations (25.0%) meeting the same standard this year. The 40.8% points increase in mathematics was from 21.7% (5 of 23 observations) meeting the standard last year to 62.5% (10 of 16 observations) meeting the same standard this year.

The recommendations that follow are based upon process and product evaluation results.

RECOMMENDATIONS

The recommendations that follow are based on this year's process and product evaluations and are intended to help bring about State Bilingual/Migrant program improvements in the following school year.

The recommended ideas and techniques offered below stem from a perceived problem and are just one of many ways to improve the performance of the program. As solutions are sought for optimum program operations, a dialogue/discussion should be undertaken to determine the best and most workable way to solve the perceived problem. The staff and evaluator should be brought into these discussions as has been the practice in the past so that all involved feel part of the proposed new operation of the program.

1. Reduce variations in the program between building sites by having the supervisor and State Bilingual/Migrant staff analyze the building results presented in Appendix C. Hopefully, a plan can be formulated to reduce (or control) these variations in program impact.

2. A set of district supported inservice offerings to regular education staff should be continued relative to the special needs of bilingual/migrant students. Support from curriculum heads (assistant superintendents for elementary, secondary, special and adult and continuation education) needs to be generated to increase the attendance of all teaching staff. These training sessions to be successful must enhance the awareness of staff regarding LEP students, increase the strategies available to deal effectively with multi-cultural issues in student learning, allow teachers a greater understanding of cultural differences and how these difficulties may be used to achieve greater academic attainment, etc.

3. Due to space concerns relative to providing an adequate instructional program, small number of students by grade at various school sites and the limited number of State Bilingual/Migrant staff members, it may be more feasible in a centralized sites for State Bilingual/Migrant services at the elementary, middle, and high school levels are established. These centralized sites would hopefully use site-based decision making where one of their major priorities would be greater academic achievement in LEP, Migrant, and minority students from a multi-cultural background. Hopefully, school-wide Chapter 1 funds and general fund support would be allocated to these sites to help alleviate the inadequate resources to carry out the mission of Bilingual/Migrant education and provide much needed assistance to disadvantaged language minority students.

4. Parents need to be exposed (and administrators/teachers and aides re-exposed) to the basic issues of successful bilingual programs. These topics plus issues related to policy need to be explored this school year as the district finalizes steps to implement its strategic plan in the next three to five years. Listed below are a set of readings in these areas that may be helpful for parents, teachers, aides, and administrators. Copies/reprints of these articles plus an ERIC search are available upon request from the Department of Testing, Evaluation, and Research. The bibliography at the end of this report gives further details related to each article.

Author	Title
D. Burke	How Do You Spell Principal in Urdu?
P. Corson	Foreign Language Policy at School Level: FLT and Cultural Studies Across the Curriculum
G. A. Cziko	The Evaluation of Bilingual Education: From Necessity and Probability to Possibility
E. Harding & T. Rodgers	Language Laboratories: What Have We Learned?
Healdsburg Union School District, California	Project Puente Outreach
K. J. Lindholm	Bilingual Immersion Education: Criteria for Program Development

Author	Title
K. J. Lindholm & H. H. Fairchild	Evaluation of an Elementary School Bilingual Immersion Program
M. Medina	Native and Spanish Language Proficiency in a Bilingual Education Program
M. McGroarty	The Societal Context of Bilingual Education
Milwaukee Public Schools	Bilingual Bicultural Education Program
L. C. Moll	Bilingual Classroom Studies and Community Analysis
L. Pease-Alvarez & K. Hakuta	Enriching Our Views of Bilingualism and Bilingual Education
C. E. Snow	Perspectives on Second-Language Development: Implications for Bilingual Education
K. Taylor	English is Learned Here
C. M. Valadez & C. P. Gregoire	Development of a Bilingual Education Plan

5. Added efforts are needed to pre- and post-test students who are eligible and served by the program. The program supervisor (in consultation with the evaluation department) should address this situation and develop strategies to help alleviate problems in this area.

BIBLIOGRAPHY

Burke, D. (1991, January). How do you spell principal in Urdu? Principal, pp. 14-16.

Corson, D. (1989). Foreign language policy at school level: FLT and cultural studies across the curriculum. Foreign Language Annals, 22(4), 323-338.

CTB/McGraw-Hill (1985). California Achievement Tests, Forms E and F (CAT E and F). CTB: Monterey, CA.

CTB MacMillan/McGraw-Hill (1993). California Achievement Tests, Fifth Edition (CAT/5). CTB: Monterey, CA.

Cziko, G. A. (1992). The evaluation of bilingual education: From necessity and probability to possibility. Educational Researcher, 21(2), 10-15.

Harding, E. & Rodgers, T. (1985, April). Language laboratories: What have we learned? NASSP Bulletin, pp. 21-29.

Healdsburg Union School District, CA. (1990). Project Puente Outreach. (Available from Education Research Service, School Operations Information Bank, 2000 Clarendon Boulevard, Arlington, VA 22201).

Lindholm, K. J. (1990). Bilingual immersion education: Criteria for program development. In Padillo, A.M., Fairchild, H. H., & Valadez, C.M. (Eds.), Bilingual Education: Issues and Strategies (pp. 91-105). Newbury Park, CA: Sage.

Lindholm, K. J. & Fairchild, H. H. (1990). Evaluation of an elementary school bilingual immersion program. In Padilla, A. M., Fairchild, H. H., & Valadez, C. M. (Eds.), Bilingual Education: Issues and Strategies (pp. 126-136). Newbury Park, CA: Sage.

Medina, M. (1991). Native and Spanish language proficiency in a bilingual education program. Journal of Education Research, 85(2), 100-106.

McGroarty, M. (1992). The societal context of bilingual education. Educational Researcher, 21(2), 7-9 & 24.

Milwaukee Public Schools. (1979). Bilingual Bicultural Education Program. (Available from Educational Research Service, School Operations Information Bank, 2000 Clarendon Boulevard, Arlington, VA 22201).

Moll, L. C. (1992). Bilingual classroom studies and community analysis: Some recent trends. Educational Researcher, 21(2), 20-24.

Pease-Alvarez, L. & Hakuta, K. (1992). Enriching our views of bilingualism and bilingual education. Educational Researcher, 21(2), 4-6.

Snow, C. E. (1992). Perspectives on second-language development: Implications for bilingual education. Educational Researcher, 21(2), 16-19.

Taylor, K. (1991, March). English is learned here. (Available from Office of Institutional Communications and Development, Southwest Education Development Laboratory, 211 East Seventh St., Austin, TX 78701-3281).

Valadez, C. M. & Gregoire, C. P. (1990). Development of a bilingual education plan. In Padillo, A. M., Fairchild, H. H., & Valadez, C. M. (Eds.), Bilingual Education: Issues and Strategies (pp. 106-125). Newbury Park, CA: Sage.

APPENDICES

APPENDIX A

1992-93 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: Total State Bilingual

COUNT OF PROGRAM PARTICIPANTS

Building	K	1	2	3	4	5	6	Total
E. Baillie	0	0	0	0	1	0	1	2
Coulter	5	3	2	0	1	1	0	12
Emerson	7	12	3	1	1	1	0	25
Fuerbringer	5	10	8	0	0	0	0	23
N. Haley	8	10	2	0	0	1	0	21
Handley	4	9	7	0	0	0	1	21
Heavenrich	0	4	2	1	0	0	0	7
Herig	15	13	6	2	0	0	0	36
Houghton	7	3	4	0	0	0	0	14
Jerome	12	17	6	1	1	0	1	38
Jones	2	5	1	0	0	3	0	11
Kempton	8	12	5	0	0	0	0	25
Longfellow	16	16	4	5	4	0	0	45
Longstreet	4	1	3	0	0	0	0	8
J. Loomis	6	13	11	2	0	0	0	32
Merrill Park	9	9	12	2	2	0	0	34
C. Miller	6	14	13	1	0	2	0	36
J. Moore	10	9	10	1	0	0	0	30
Morley	1	3	1	0	0	1	0	6
J. Rouse	26	19	9	4	3	2	3	66
Salina	5	2	2	0	0	0	0	9
Stone	18	22	12	2	0	2	0	56
Webber Ele.	20	25	9	1	3	1	1	60
Zilwaukee	3	0	2	0	1	1	0	7
TOTAL	197	231	134	23	17	15	7	624

*Count as of October 12, 1992 computer run that included all participants.

APPENDIX A

1992-93 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: **Total State Bilingual**

COUNT OF PROGRAM PARTICIPANTS

Building	7	8	9	Total
Central Junior	1	0	1	2
North Intermediate	7	3	6	16
South Intermediate	6	0	6	12
Webber Junior	2	4	1	7
TOTAL	16	7	14	37

*Count as of October 12, 1992 computer run that included all participants.

1992-93 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: **Total State Bilingual**

COUNT OF PROGRAM PARTICIPANTS

Building	10	11	12	Total
Arthur Hill	6	0	0	6
Saginaw High	8	2	0	10
TOTAL	14	2	0	16

*Count as of October 12, 1992 computer run that included all participants.

APPENDIX A

1992-93 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: Total Migrant

COUNT OF PROGRAM PARTICIPANTS

Building	K	1	2	3	4	5	6	Total
E. Baillie	0	2	1	1	1	0	0	5
Coulter	3	0	3	1	2	2	2	13
Emerson	2	7	2	4	2	3	2	22
Fuerbringer	0	3	2	0	1	1	1	8
N. Haley	2	6	4	2	2	3	5	24
Handley	0	0	0	0	0	0	1	1
Heavenrich	0	1	1	3	1	0	2	8
Herig	0	3	1	3	0	1	3	11
Houghton	2	1	2	3	3	1	0	12
Jerome	1	2	0	2	2	1	1	9
Jones	0	1	1	0	1	1	0	4
Kempton	0	0	0	0	0	0	0	0
Longfellow	2	4	2	5	8	1	2	24
Longstreet	1	1	4	1	0	2	1	10
J. Loomis	4	9	3	4	4	3	0	27
Merrill Park	0	3	4	1	3	0	1	12
C. Miller	1	3	0	2	3	2	5	16
J. Moore	2	0	6	2	2	3	2	17
Morley	1	0	2	1	0	1	0	5
J. Rouse	7	11	8	8	4	6	6	50
Salina	2	3	2	0	1	0	0	8
Stone	3	9	7	6	4	5	4	38
Webber Ele.	8	14	9	10	7	1	6	55
Zilwaukee	0	0	0	0	0	0	1	1
TOTAL	41	83	64	59	51	37	56	380

*Count as of December 10, 1992 computer run that included all participants.

APPENDIX A

1992-93 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: **Total Migrant**

COUNT OF PROGRAM PARTICIPANTS

Building	7	8	9	Total
Central Junior	4	3	5	12
North Intermediate	16	15	15	46
South Intermediate	11	7	9	27
Webber Junior	18	17	19	54
TOTAL	49	42	48	139

*Count as of December 10, 1992 computer run that included all participants.

1992-93 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: **Total Migrant**

COUNT OF PROGRAM PARTICIPANTS

Building	10	11	12	Total
Arthur Hill	15	19	18	52
Saginaw High	4	2	8	14
TOTAL	19	21	26	66

*Count as of December 10, 1992 computer run that included all participants.

APPENDIX B

IDENTIFICATION AND ELIGIBILITY PROCEDURES FOR STATE BILINGUAL AND MIGRANT STUDENTS

State Bilingual

The first step in the procedures is that of a student identification. Potential students are identified by means of a Home Language Survey. The survey is designed to determine if: 1) the native or first language is other than English or; 2) a language other than English is regularly used in the student's home or environment. Students in grades K-2 eligible for the program on the basis of the Home Language Survey and parental permission. Students in grades 3-12 go through a more extensive eligibility system which is described below.

In addition to the Home Language Survey, students in grades 3-12 are also tested on one or two instruments for program eligibility. For students who are new or have never been in the Bilingual program, the first is a test of oral English proficiency. In Saginaw, the Language Assessment Battery (LAB) test is used for this purpose and is usually administered in the fall of each year. If the student scores at or below the 40th percentile, then the student is eligible. However, if the student scores above the 40th percentile, then the student is given an English reading achievement test. The California Achievement Test (CAT) is used for this purpose. If the student scores at or below the 40th percentile, then the student is eligible for the program. Finally, parental permission is needed for program participation.

APPENDIX B

Students in grades 3-12 who were in the Bilingual program the previous year go through a somewhat different eligibility procedure. These students are sub-ject to a program exit criterion which is based on the student's post-test English reading achievement score. If the student's post-test score remains at or below the 40th percentile, the student is ineligible. However, eligibility is based on either the oral English language proficiency test score or the English reading achievement test score. In addition, a score that is used for eligibility is to be the result of a test administration no earlier than the spring of the preceding school year. It is, therefore, possible for a student to exceed the 40th percentile on the reading achievement test and become eligible when retested with the oral English proficiency test. The final eligibility requirement is that students:

> ... shall be enrolled in the Bilingual instruction program for three years or until the child achieves a level of proficiency in English language skills sufficient to receive an equal educational opportunity in the regular school program, whichever comes first.[1]

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[1] Bilingual Education Office. (1979). Administrator's Manual for Bilingual Education Programs in Michigan 1979-80. Lansing: Michigan Department of Education. Appendix A, page 4.

APPENDIX B

Migrant

Eligibility for the Migrant program is based solely on whether a student is one of three Migrant designations. The district does, however, attempt to serve those students with the greatest academic need, and nearly all Migrant students scored at or below the 40th percentile on an English reading achievement test.

The three designations of Migrant students are:

1) Interstate: Student has moved within the last year across state boundaries.

2) Intrastate: Student has moved within the last year across school district boundaries within the state.

3) Five Year Settled Out: Student has remained within a school district for at least five years.

Table C-1

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 State Bilingual Pupils in Total Reading (Basic Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				1	23.0	9.0	-14.0	0				0			
Coulter	0				0				0				1	24.0	24.0	0.0	1	36.0	22.0	-14.0	0			
Emerson	1	21.0	47.0	26.0	0				1	8.0	1.0	-7.0	0				0				0			
Fuerbringer	1	15.0	29.0	14.0	2	29.5	20.5	-9.0	0				0				0				0			
Haley	0				1	31.0	36.0	5.0	0				0				1	39.0	34.0	-5.0	0			
Handley	0				0				0				0				0				0			
Heavenrich	0				0				1	10.0	40.0	30.0	0				0				0			
Herig	0				4	37.0	30.7	-6.3	0				0				0				0			
Houghton	0				3	25.3	21.3	-4.0	0				0				0				0			
Jerome	1	31.0	58.0	27.0	1	46.0	73.0	27.0	0				0				0				0			
Jones	0				0				0				0				2	22.0	19.5	-2.5	0			
Kempton	0				1	39.0	46.0	7.0	0				0				0				0			
Longfellow	0				2	28.5	26.0	-2.5	1	33.0	26.0	-7.0	4	40.0	24.2	-15.8	0				0			
Longstreet	0				1	35.0	28.0	3.0	0				0				0				0			
Loomis	0				4	29.2	18.7	-10.5	0				0				0				0			
M. Park	0				4	29.0	34.2	5.2	1	37.0	42.0	5.0	1	46.0	51.0	5.0	0				0			
C. Miller	2	28.5	52.0	23.5	2	35.5	38.0	2.5	0				0				0				2	38.0	37.5	-0.5
J. Moore	0				3	23.6	35.0	11.4	0				0				0				0			
Morley	0				0				0				0				0				0			
J. Rouse	0				3	35.0	33.0	-2.0	1	27.0	37.0	10.0	1	24.0	31.0	7.0	1	43.0	42.0	-1.0	0			
Salina	0				1	32.0	18.0	-14.0	0				0				0				0			
Stone	0				1	32.0	50.0	18.0	2	34.5	34.5	0.0	0				1	40.0	42.0	2.0	0			
Webber El.	0				6	34.6	41.6	7.0	1	29.0	44.0	15.0	2	34.5	27.0	-7.5	1	29.0	3.0	-26.0	1	34.0	42.0	8.0
Zilwaukee	0				0				0				1	26.0	30.0	4.0	0				0			
TOTAL	5	24.8	47.6	22.8	39	31.8	32.8	1.0	8	26.6	32.3	5.7	11	33.8	26.9	-6.9	7	33.0	26.0	-7.0	3	36.7	39.0	2.3

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Table C-2

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 State Bilingual Pupils in Reading Comprehension (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				1	29.0	16.0	-13.0	0				0			
Coulter	0				0				0				1	21.0	28.0	7.0	1	36.0	22.0	-14.0	0			
Emerson	1	24.0	48.0	24.0	0				1	9.0	1.0	-8.0	0				0				0			
Fuerbringer	1	14.0	24.0	10.0	2	32.0	20.5	-11.5	0				0				0				0			
Haley	0				1	33.0	40.0	7.0	0				0				1	41.0	32.0	-9.0	0			
Handley	0				0				0				0				0				0			
Heavenrich	0				0				1	14.0	45.0	31.0	0				0				0			
Herig	0				4	40.2	25.2	-15.0	0				0				0				0			
Houghton	0				3	34.3	20.6	-13.7	0				0				0				0			
Jerome	1	26.0	58.0	32.0	1	52.0	68.0	16.0	0				0				0				0			
Jones	0				0				0				0				2	25.0	30.0	5.0	0			
Kempton	0				1	45.0	48.0	3.0	0				0				0				0			
Longfellow	0				2	31.5	29.0	-2.5	1	38.0	22.0	-16.0	4	42.5	27.0	-15.5	0				0			
Longstreet	0				1	33.0	37.0	4.0	0				0				0				0			
Loomis	0				4	26.2	17.2	-9.0	0				0				0				0			
M. Park	0				4	30.0	31.5	1.5	1	46.0	45.0	-1.0	1	48.0	54.0	6.0	0				0			
C. Miller	2	26.0	51.0	25.0	2	39.0	39.0	0.0	0				0				0				2	36.5	48.5	12.0
J. Moore	0				1	30.0	34.6	4.6	0				0				0				0			
Morley	0				0				0				0				0				0			
J. Rouse	0				3	34.0	32.3	-1.7	1	28.0	34.0	6.0	1	17.0	34.0	17.0	1	41.0	27.0	-14.0	0			
Salina	0				1	33.0	23.0	-10.0	0				0				0				0			
Stone	0				1	41.0	48.0	7.0	2	39.5	38.5	-1.0	0				1	44.0	46.0	2.0	0			
Webber El.	0				6	40.0	45.0	5.0	1	38.0	38.0	0.0	2	35.0	39.5	4.5	1	34.0	18.0	-16.0	1	38.0	43.0	5.0
Zilwaukee	0				0				0				1	27.0	33.0	6.0	0				0			
TOTAL	5	23.2	46.4	23.2	39	34.9	32.5	-2.4	8	31.5	32.7	1.2	11	34.7	32.0	-2.7	7	35.1	29.5	-5.9	3	37.0	46.6	9.6

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Table C-3

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 State Bilingual Pupils in Total Math (Basic Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				0				0				0			
Coulter	0				1	31.0	73.0	42.0	0				0				0				0			
Emerson	1	9.0	41.0	32.0	0				1	16.0	20.0	4.0	0				0				0			
Fuerbringer	1	6.0	29.0	23.0	3	29.6	34.3	4.7	0				0				0				0			
Haley	0				0				0				0				0				0			
Handley	0				0				0				0				0				0			
Heavenrich	0				1	26.0	20.0	-6.0	1	9.0	11.0	2.0	0				0				0			
Herig	0				0				0				0				0				0			
Houghton	0				0				0				0				0				0			
Jerome	1	16.0	61.0	45.0	1	49.0	99.0	50.0	0				0				0				0			
Jones	0				0				0				0				1	23.0	41.0	18.0	0			
Kempton	0				0				0				0				0				0			
Longfellow	0				1	40.0	17.0	-23.0	0				1	22.0	34.0	12.0	0				0			
Longstreet	0				1	10.0	19.0	9.0	0				0				0				0			
Loomis	0				4	18.2	29.2	11.0	0				0				0				0			
M. Park	0				2	41.0	48.5	7.5	0				1	47.0	21.0	-26.0	0				0			
C. Miller	2	29.0	72.5	43.5	3	19.0	36.3	17.3	0				0				0				0			
J. Moore	0				0				0				0				0				0			
Morley	0				1	7.0	23.0	16.0	0				0				0				0			
J. Rouse	0				0				1	14.0	35.0	21.0	1	29.0	21.0	-8.0	0				0			
Salina	0				0				0				0				0				0			
Stone	0				0				1	1.0	33.0	32.0	0				0				0			
Webber El.	0				1	31.0	49.0	18.0	0				0				0				0			
Zilwaukee	0				0				0				0				0				0			
TOTAL	5	17.8	55.2	37.4	19	26.0	38.2	12.2	4	10.0	24.7	14.7	3	32.6	25.3	-7.3	1	23.0	41.0	18.0	0			

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Table C-4

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 State Bilingual Pupils in Mathematics Concepts and Applications (Advanced Skills)
Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillio	0				0				0				0				0				0			
Coulter	0				1	36.0	65.0	29.0	0				0				0				0			
Emerson	1	19.0	42.0	23.0	0				1	13.0	9.0	-4.0	0				0				0			
Fuerbringer	1	10.0	33.0	23.0	3	43.0	34.3	-8.7	0				0				0				0			
Haley	0				0				0				0				0				0			
Handley	0				0				0				0				0				0			
Heavenrich	0				1	28.0	12.0	-16.0	1	8.0	24.0	16.0	0				0				0			
Herig	0				0				0				0				0				0			
Houghton	0				0				0				0				0				0			
Jerome	1	23.0	62.0	39.0	1	66.0	99.0	33.0	0				0				0				0			
Jones	0				0				0				0				1	24.0	38.0	14.0	0			
Keepton	0				0				0				0				0				0			
Longfellow	0				1	50.0	15.0	-35.0	0				1	27.0	25.0	-2.0	0				0			
Longstreet	0				1	21.0	17.0	-4.0	0				0				0				0			
Loomis	0				4	26.2	33.0	6.8	0				0				0				0			
M. Park	0				2	50.0	52.5	2.5	0				1	54.0	28.0	-26.0	0				0			
C. Miller	2	38.0	62.0	24.0	3	20.6	32.0	11.4	0				0				0				0			
J. Moore	0				0				0				0				0				0			
Morley	0				1	6.0	9.0	3.0	0				0				0				0			
J. Rouse	0				0				1	16.0	32.0	16.0	1	36.0	34.0	-2.0	0				0			
Salina	0				0				0				0				0				0			
Stone	0				0				1	1.0	30.0	29.0	0				0				0			
Webber El.	0				1	36.0	50.0	14.0	0				0				0				0			
Zilwaukee	0				0				0				0				0				0			
TOTAL	5	25.6	52.2	26.6	19	33.6	37.0	3.4	4	9.5	23.7	14.2	3	39.0	29.0	-10.0	1	24.0	38.0	14.0	0			

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APPENDIX C

Table C-5

Mean Normal Curve Equivalent Gain by Building and Grade for All 7-9 State Bilingual Pupils in Total Reading (Basic Skills) and Reading Comprehension (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 7 Normal Curve Equivalents				GRADE 8 Normal Curve Equivalents				GRADE 9 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL READING												
Central	0				0				0			
North	1	11.0	22.0	11.0	0				0			
South	2	41.0	32.0	-4.0	0				2	35.5	26.0	9.5
Webber	1	35.0	34.0	-1.0	2	25.0	25.0	0.0	1	39.0	26.0	-13.0
System	4	32.0	32.5	0.5	2	25.0	25.0	0.0	3	36.6	26.0	-10.6
ADVANCED SKILLS												
Central	0				0				0			
North	1	5.0	35.0	30.0	0				0			
South	2	46.5	44.5	-2.0	0				2	40.5	20.0	-20.5
Webber	1	41.0	28.0	-13.0	2	21.5	28.5	7.0	1	41.0	30.0	-11.0
System	4	34.7	38.0	3.3	2	21.5	28.5	7.0	3	40.6	23.3	-17.3

APPENDIX C

Table C-6

Mean Normal Curve Equivalent Gain by Building and Grade for All 7-9 State Bilingual Pupils in Total Mathematics (Basic Skills) and Mathematics Concepts and Application (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 7 Normal Curve Equivalents				GRADE 8 Normal Curve Equivalents				GRADE 9 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL MATHEMATICS												
Central	0				0				0			
North	1	13.0	26.0	13.0	0				0			
South	0				0				1	31.0	40.0	9.0
Webber	0				2	23.5	30.0	6.5	1	29.0	26.0	-3.0
System	1	13.0	26.0	13.0	2	23.5	30.0	6.5	2	30.0	33.0	3.0
CONCEPTS AND APPLICATIONS												
Central	0				0				0			
North	1	16.0	24.0	8.0	0				0			
South	0				0				1	32.0	28.0	6.0
Webber	0				2	25.5	25.5	0.0	1	27.0	14.0	-13.0
System	1	16.0	24.0	8.0	2	25.5	25.5	0.0	2	29.5	26.0	-3.5

APPENDIX C

Table C-7

Mean Normal Curve Equivalent Gain by Building and Grade for All 10-12 State Bilingual Pupils in Total Reading (Basic Skills) and Reading Comprehension (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 10 Normal Curve Equivalents				GRADE 11 Normal Curve Equivalents				GRADE 12 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL READING												
Arthur Hill	0				0				0			
Saginaw High	0				0				0			
System	0				0				0			
READING COMPREHENSION												
Arthur Hill	0				0				0			
Saginaw High	0				0				0			
System	0				0				0			

APPENDIX C

Table C-8

Mean Normal Curve Equivalent Gain by Building and Grade for All 10-12 State Bilingual Pupils in Total Mathematics (Basic Skills) and Mathematics Concepts and Application (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 10 Normal Curve Equivalents				GRADE 11 Normal Curve Equivalents				GRADE 12 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL MATHEMATICS												
Arthur Hill	0				0				0			
Saginaw High	1	27.0	28.0	1.0	0				0			
System	1	27.0	28.0	1.0	0				0			
CONCEPTS AND APPLICATIONS												
Arthur Hill	0				0				0			
Saginaw High	1	32.0	48.0	16.0	0				0			
System	1	32.0	48.0	16.0	0				0			

Table C-9

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 Migrant Pupils in Total Reading (Basic Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				1	39.0	26.0	-13.0	0				0			
Coulter	0				0				0				0				1	23.0	21.0	-2.0	1	41.0	38.0	-3.0
Emerson	1	21.0	47.0	26.0	0				1	35.0	28.0	-7.0	0				2	39.0	41.0	2.0	2	28.0	29.0	1.0
Fuerbringer	0				2	22.5	17.0	-5.5	0				0				0				0			
Haley	0				1	31.0	36.0	5.0	1	28.0	39.0	11.0	1	45.0	38.0	-7.0	0				5	30.4	26.0	-4.4
Handley	0				0				0				0				0				0			
Heavenrich	0				1	32.0	28.0	-4.0	0				0				0				1	21.0	17.0	-4.0
Herig	0				1	38.0	26.0	-12.0	2	39.5	38.5	-1.5	0				0				2	23.5	20.5	-3.5
Houghton	0				2	29.0	21.5	-7.5	0				0				0				0			
Jerome	0				0				0				0				0				0			
Jones	0				0				0				0				1	21.0	3.0	-18.0	0			
Kempton	0				0				0				0				0				0			
Longfellow	0				0				3	39.0	40.3	1.3	3	38.3	21.0	-17.3	0				0			
Longstreet	0				0				0				0				1	29.0	18.0	-11.0	0			
Loomis	0				2	33.0	15.0	-18.0	1	19.0	11.0	-8.0	1	28.0	35.0	7.0	1	42.0	42.0	0.0	0			
M. Park	0				1	30.0	40.0	10.0	1	30.0	43.0	13.0	1	29.0	22.0	-7.0	0				0			
C. Miller	1	28.0	49.0	21.0	0				1	56.0	27.0	-29.0	0				0				3	38.6	38.3	-0.3
J. Moore	0				2	28.0	34.5	6.5	1	25.0	28.0	3.0	1	29.0	26.0	-3.0	2	25.5	17.5	-8.0	1	26.0	39.0	13.0
Morley	0				0				0				0				0				0			
J. Rouse	0				3	35.0	33.0	-2.0	4	22.5	21.5	-1.0	0				2	27.0	30.0	3.0	2	23.5	29.5	6.0
Salina	0				1	22.0	16.0	-6.0	0				0				0				0			
Stone	0				2	34.0	33.5	-0.5	3	31.3	35.0	3.7	3	15.6	20.3	4.7	2	37.5	26.5	-11.0	1	24.0	18.0	-6.0
Webber El.	0				3	40.3	39.3	-1.0	3	41.3	39.6	-1.7	4	29.0	33.0	4.0	0				4	39.5	39.0	-0.5
Zilwaukee	0				0				0				0				0				0			
TOTAL	2	24.5	48.0	23.5	21	32.0	28.8	-3.2	21	33.1	32.5	-0.6	15	29.8	26.8	-3.0	12	31.0	26.1	-4.9	22	31.2	30.5	-0.7

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Table C-10

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 Migrant Pupils in Reading Comprehension (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				1	38.0	24.0	-14.0	0				0			
Coulter	0				0				0				0				1	32.0	20.0	-12.0	1	47.0	47.0	0.0
Emerson	1	24.0	48.0	24.0	0				1	35.0	26.0	-9.0	0				2	46.0	42.5	-3.5	2	23.0	33.0	10.0
Fuerbringer	0				2	22.5	14.5	-8.0	0				0				0				0			
Haley	0				1	33.0	40.0	7.0	1	34.0	33.0	-1.0	1	52.0	42.0	-10.0	0				5	32.0	29.0	-3.0
Handley	0				0				0				0				0				0			
Heavenrich	0				1	38.0	27.0	-11.0	0				0				0				1	25.0	15.0	-10.0
Herig	0				1	45.0	31.0	-14.0	2	42.0	42.5	0.5	0				0				2	27.0	24.0	-3.0
Houghton	0				2	39.5	21.0	-18.5	0				0				0				0			
Jerome	0				0				0				0				0				0			
Jones	0				0				0				0				1	29.0	18.0	-11.0	0			
Kempton	0				0				0				0				0				0			
Longfellow	0				0				3	40.0	43.0	3.0	3	39.6	23.3	-17.3	0				0			
Longstreet	0				0				0				0				1	32.0	30.0	-2.0	0			
Loomis	0				2	33.0	17.0	-16.0	1	9.0	1.0	-8.0	1	26.0	37.0	11.0	1	48.0	43.0	-5.0	0			
M. Park	0				1	38.0	40.0	2.0	1	35.0	43.0	8.0	1	38.0	18.0	-20.0	0				0			
C. Miller	1	24.0	52.0	28.0	0				1	44.0	24.0	-20.0	0				0				3	38.0	47.0	9.0
J. Moore	0				2	34.5	34.0	-0.5	1	32.0	33.0	1.0	1	29.0	28.0	-1.0	2	29.0	21.0	-8.0	1	26.0	29.0	3.0
Morley	0				0				0				0				0				0			
J. Rouse	0				3	34.0	32.3	-1.7	4	19.7	24.0	4.3	0				2	35.5	23.0	-12.5	2	28.5	31.0	2.5
Salina	0				1	23.0	17.0	-6.0	0				0				0				0			
Stone	0				2	33.5	34.0	0.5	3	35.6	37.6	2.0	3	18.6	19.6	1.0	2	42.5	26.0	-16.5	1	24.0	12.0	-12.0
Webber El.	0				3	42.0	42.3	0.3	3	48.6	47.3	-1.3	4	31.5	36.7	5.2	0				4	47.2	42.7	-4.5
Zilwaukee	0				0				0				0				0				0			
TOTAL	2	24.0	50.0	26.0	21	34.8	29.5	-5.2	21	34.5	34.5	0.0	15	32.2	28.1	-4.1	12	37.2	28.0	-9.2	22	33.7	33.4	-0.3

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Table C-11

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 Migrant Pupils in Total Math (Basic Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				0				0				0			
Coulter	0				1	29.0	44.0	15.0	0				0				0				0			
Emerson	1	9.0	41.0	32.0	0				2	34.5	38.0	3.5	1	44.0	55.0	11.0	1	20.0	11.0	-9.0	1	32.0	14.0	-18.0
Fuerbringer	0				1	34.0	43.0	9.0	0				0				0				0			
Haley	0				1	21.0	33.0	12.0	0				0				0				3	23.0	31.3	8.3
Handley	0				0				0				0				0				0			
Heavenrich	0				0				1	51.0	36.0	-15.0	0				0				1	16.0	26.0	10.0
Herig	0				1	30.0	37.0	7.0	1	40.0	38.0	-2.0	0				0				1	19.0	31.0	12.0
Houghton	0				0				0				0				1	46.0	55.0	9.0	0			
Jerome	0				0				1	29.0	45.0	16.0	0				0				0			
Jones	0				0				0				0				0				0			
Kempton	0				0				0				0				0				0			
Longfellow	0				0				1	37.0	66.0	29.0	2	27.5	39.0	11.5	1	19.0	53.0	34.0	1	38.0	34.0	-4.0
Longstreet	0				0				0				0				1	34.0	30.0	-4.0	0			
Loomis	0				1	1.0	25.0	24.0	0				1	16.0	31.0	15.0	1	43.0	45.0	2.0	0			
M. Park	0				0				0				0				0				0			
C. Miller	1	10.0	68.0	58.0	0				0				0				0				2	31.0	36.0	5.0
J. Moore	0				0				1	29.0	23.0	-6.0	0				1	23.0	22.0	-1.0	0			
Morley	0				0				0				0				0				0			
J. Rouse	0				0				5	36.8	43.0	6.2	0				1	38.0	35.0	-3.0	3	30.6	26.6	-4.0
Salina	0				1	29.0	30.0	1.0	0				0				0				0			
Stone	0				0				2	41.0	32.0	-9.0	2	37.0	21.0	-16.0	2	18.5	24.5	6.0	1	21.0	11.0	-10.0
Webber El.	0				1	31.0	49.0	18.0	1	38.0	27.0	-11.0	2	55.5	53.0	-2.5	0				1	18.0	10.0	-8.0
Zilwaukee	0				0				0				0				0				0			
TOTAL	2	9.5	54.5	45.0	7	25.0	37.2	12.2	15	37.2	39.3	2.1	8	37.5	39.0	1.5	9	28.8	33.3	4.5	14	26.2	26.5	0.3

Table C-12

Mean Normal Curve Equivalent Gain by Building and Grade for All 1-6 Migrant Pupils in Mathematics Concepts And Applications (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents				Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
E. Baillie	0				0				0				0				0				0			
Coulter	0				1	34.0	45.0	11.0	0				0				0				0			
Emerson	1	19.0	42.0	23.0	0				2	42.0	28.0	-14.0	1	61.0	44.0	-17.0	1	30.0	1.0	-29.0	1	32.0	31.0	-1.0
Fuerbringer	0				1	40.0	53.0	13.0	0				0				0				0			
Haley	0				1	23.0	27.0	4.0	0				0				0				3	20.6	34.3	13.7
Handley	0				0				0				0				0				0			
Heavenrich	0				0				1	66.0	30.0	-36.0	0				0				1	10.0	35.0	25.0
Herig	0				1	34.0	32.0	-2.0	1	45.0	37.0	-8.0	0				0				1	10.0	23.0	13.0
Houghton	0				0				0				0				1	56.0	60.0	4.0	0			
Jerome	0				0				1	33.0	35.0	2.0	0				0				0			
Jones	0				0				0				0				0				0			
Kempton	0				0				0				0				0				0			
Longfellow	0				0				1	42.0	66.0	24.0	2	35.5	37.5	2.0	1	48.0	55.0	7.0	1	51.0	35.0	-16.0
Longstreet	0				0				0				0				1	34.0	35.0	1.0	0			
Loomis	0				1	6.0	20.0	14.0	0				1	27.0	23.0	-4.0	1	54.0	44.0	-10.0	0			
N. Park	0				0				0				0				0				0			
E. Miller	1	10.0	58.0	48.0	0				0				0				0				2	34.5	33.0	-1.5
J. Moore	0				0				1	31.0	27.0	-4.0	0				1	17.0	12.0	-5.0	0			
Morley	0				0				0				0				0				0			
J. Rouse	0				0				5	42.8	34.6	-8.2	0				1	43.0	40.0	-3.0	3	37.0	31.0	-6.0
Salina	0				1	33.0	34.0	1.0	0				0				0				0			
Stone	0				0				2	52.0	33.5	-18.5	2	40.5	21.5	-19.0	2	20.0	27.5	7.5	1	27.0	1.0	-26.0
Webber El.	0				1	36.0	50.0	14.0	1	48.0	18.0	-30.0	2	54.0	42.0	-12.0	0				1	15.0	20.0	5.0
Zilwaukee	0				0				0				0				0				0			
TOTAL	2	14.5	50.0	35.5	7	29.4	37.2	7.8	15	44.4	33.9	-10.5	8	43.5	33.6	-9.9	9	35.7	33.5	-2.2	14	27.6	29.0	1.4

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APPENDIX C

Table C-13

Mean Normal Curve Equivalent Gain by Building and Grade for All 7-9 Migrant Pupils in Total Reading (Basic Skills) and Reading Comprehension (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 7 Normal Curve Equivalents				GRADE 8 Normal Curve Equivalents				GRADE 9 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL READING												
Central	2	24.0	25.0	1.0	1	7.0	30.0	23.0	1	33.0	29.0	-4.0
North	1	42.0	40.0	-2.0	0				1	12.0	6.0	-6.0
South	4	37.5	40.0	2.5	2	31.0	26.0	-5.0	2	36.0	25.0	-10.5
Webber	3	30.6	36.3	5.7	5	21.2	25.6	4.4	3	32.0	30.0	-2.0
System	10	33.2	35.9	2.7	8	21.8	26.2	4.3	7	30.4	25.1	-5.3
READING COMPREHENSION												
Central	2	19.5	25.0	5.5	1	20.0	27.0	7.0	1	31.0	36.0	5.0
North	1	47.0	28.0	-19.0	0				1	22.0	14.0	-8.0
South	4	47.0	46.7	-0.3	2	36.5	31.5	-5.0	2	41.5	25.0	-16.5
Webber	3	33.3	36.6	3.3	5	24.0	27.6	3.6	3	35.0	28.0	-7.0
System	10	37.4	37.5	0.1	8	26.6	28.5	1.9	7	34.4	26.2	-8.2

APPENDIX C

Table C-14

Mean Normal Curve Equivalent Gain by Building and Grade for All 7-9 Migrant Pupils in Total Mathematics (Basic Skills) and Mathematics Concepts and Application (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 7 Normal Curve Equivalents				GRADE 8 Normal Curve Equivalents				GRADE 9 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL MATHEMATICS												
Central	0				0				1	31.0	32.0	1.0
North	0				0				1	34.0	47.0	13.0
South	1	28.0	29.0	1.0	0				2	34.0	35.0	1.0
Webber	2	25.0	30.5	5.5	2	24.0	17.5	-6.5	3	22.6	25.0	2.4
System	3	26.0	30.0	4.0	2	24.0	17.5	-6.5	7	28.7	32.0	3.3
CONCEPTS AND APPLICATIONS												
Central	0				0				1	34.0	32.0	-2.0
North	0				0				1	48.0	53.0	5.0
South	1	26.0	34.0	8.0	0				2	38.5	29.5	-9.0
Webber	2	25.5	25.0	-0.5	2	25.0	19.5	-5.5	3	21.3	24.3	3.0
System	3	25.6	28.0	2.4	2	25.0	19.5	-5.5	7	31.8	31.0	-0.8

APPENDIX C

Table C-15

Mean Normal Curve Equivalent Gain by Building and Grade for All 10-12 Migrant Pupils in Total Reading (Basic Skills) and Reading Comprehension (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 10 Normal Curve Equivalents				GRADE 11 Normal Curve Equivalents				GRADE 12 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL READING												
Arthur Hill	0				0				0			
Saginaw High	0				0				0			
System	0				0				0			
READING COMPREHENSION												
Arthur Hill	0				0				0			
Saginaw High	0				0				0			
System	0				0				0			

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APPENDIX C

Table C-16

Mean Normal Curve Equivalent Gain by Building and Grade for All 10-12 Migrant Pupils in Total Mathematics (Basic Skills) and Mathematics Concepts and Application (Advanced Skills) Based on April-May, 1992 Pre-Testing and April-May, 1993 Post-Testing on CAT (Spring to Spring)

Subject/ School	GRADE 10 Normal Curve Equivalents				GRADE 11 Normal Curve Equivalents				GRADE 12 Normal Curve Equivalents			
	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss	Number Tested	Pre Mean	Post Mean	Mean Gain/ Loss
TOTAL MATHEMATICS												
Arthur Hill	0				0				0			
Saginaw High	0				0				0			
System	0				0				0			
CONCEPTS AND APPLICATIONS												
Arthur Hill	0				0				0			
Saginaw High	0				0				0			
System	0				0				0			